

REMARKS:

Request is made for entry of new claims 11 and 12. Claims 1 - 12 are pending in the present application.

IN RESPONSE TO THE OFFICE ACTION:

The following table discusses differences between the present invention and teachings of the cited Riley reference:

COMPARISON OF THE PRESENT INVENTION WITH THE TEACHINGS OF RILEY

Claims Requirements of the Present Invention	Riley U.S. 5,456,224
The preamble of claim 1 recites “An arrangement for delivering EGR gas to a combustion engine,”	Riley teaches movement of a pivot point to vary lift of an engine valve. The reference fails to address combustible gas composition for a combustion engine.
Claim 1 also recites “at least one inlet valve and at least one exhaust valve (10)”	The reference discusses lift adjustment to inlet and exhaust valves separately (see column 8, lines 38 - 44).
Claim 1 further recites “a cam curve (23) configured to interact with a <u>cam follower (17)</u> for operating the respective at least one exhaust valve (10) during a first opening and closing phase, the cam curve (23) being further configured to interact with a <u>second cam follower (20)</u> during a second opening and closing phase”	Riley is silent regarding any teaching, by illustration or suggestion, of more than one cam follower or exhaust valve timing that coincides with the operational position of components, e.g. piston and inlet and exhaust valves, of one or more cylinders of an internal combustion engine.
In addition claim 1 requires that the exhaust valve “connects the cylinder with the exhaust system during the induction stroke after the exhaust stroke is completed.”	Riley provides no evidence of opening and closing of exhaust valves corresponding to the induction stroke of a four cycle engine. Discussion of valve operation fails to suggest simultaneous opening of inlet and exhaust valves

REJECTION UNDER 35 U.S.C. § 102:

The Office Action indicates rejection of claims 1 and 4 under 35 U.S.C. §102(b) as being anticipated by Riley (U.S. 5,456,224). The only guidance to specific bases for the rejection is provided in the phrase, “Note Figures 7(e) and 7(f), column 8, lines 38 - 44 and column 9, lines 20 - 23.” Consequently, the Office Action does not provide evidence that Riley teaches “each and every element” of the claimed invention as required for anticipation of the invention by a single prior art reference.

In response to the Office Action, Applicant has considered the Examiner’s selection of Figures 7(e) and 7(f) of Riley, but respectfully disagrees that these figures or cited portions of the description at column 8, lines 38 - 44 and column 9, lines 20 - 23 satisfy the teaching requirements of an anticipating reference under 35 U.S.C. §102. Applicant acknowledges the use of a drawing as prior art (MPEP 2125). However, the picture must show all the claimed structural features and how they are put together. *Jockmus v. Leviton*, 28 F.2d 812 (2d Cir. 1928). Also, the drawings must be evaluated for what they reasonably disclose and suggest to one of ordinary skill in the art. *In re Aslanian*, 590 F.2d 911, 200 USPQ 500 (CCPA 1979).

Attempting to consider all of the teachings of the reference, applicant perceives that Riley’s disclosure addresses adjustable lift or displacement of a valve 4 of an internal combustion engine regardless of whether displacement affects an inlet or an exhaust valve. The mechanism taught by Riley only makes it possible to vary valve lift and valve clearance, but not to shift quickly between different modes of operation. Nothing in the reference indicates or suggests the presence of a second cam follower. There are at least four requirements of claim 1 of the present invention not taught by Riley, as shown above in the table comparing the claim to teachings of the reference.

Adjustable valve displacement, according to Riley, is made possible by varying the position of a pivot point 3 for a rocker arm 2. Evidence of this is found in the Abstract of the reference which states, “Variable valve lift in an engine is achieved by varying the location of the pivot of the rocker arm or finger follower - -.” At column 4, lines 11 - 18 Riley teaches, “Variation of timing may be achieved with a rocker arm or finger follower shape that

complements that of a path for a moveable pivot to create the desired valve clearance. The invention (Riley) accomplishes variable lift, timing and duration with a moveable pivot for either the rocker arm or the finger follower while meeting other important requirements,” of which requirement (6) teaches, “The movement of the pivot point towards the valve can be far enough that the valve may be deactivated by increasing the valve clearance sufficiently.” (see column 4, lines 39 - 41 emphasis added). Illustration of pivot point movement is provided by the reference from Figure 7(a), showing valve deactivation, to Figure 7(e) corresponding to full lift shown in Figure 7(f) by the dotted line outline of a fully displaced valve. Valve deactivation to full valve displacement is shown to occur (Figures 7(a) - 7(f)) by movement of the pivot point 3 in an essentially horizontal plane.

Regardless of pivot point movement, the reference relies on a single cam follower to deflect the rocker arm of the valve operating mechanism. In contrast, claim 1 of the present invention uses two cam followers with a first “cam follower (17) for operating the respective at least one exhaust valve (10) during a first opening and closing phase, the cam curve (23) being further configured to interact with a second cam follower (20) during a second opening and closing phase - -.” Riley does not teach valve operation that involves deflection of a rocker arm first by one cam follower and then by another. There is nothing in Riley suggesting a relationship between the timing of opening and closing an exhaust valve to coincide with the induction stroke of a four stroke engine. Such a requirement exists in claim 1 of the present invention for an exhaust valve, “which connects the cylinder with the exhaust system during the induction stroke after the exhaust stroke is completed.” Opening an exhaust valve during the induction stroke of the four cylinder engine draws exhaust gas into a cylinder to satisfy the condition, “for delivering EGR gas to a combustion engine” according to the present invention. Riley is silent regarding exhaust gas recirculation.

Given the above, Applicant believes that original claim 1 is allowable and respectfully requests reconsideration and withdrawal of the rejection under 35 U.S.C. §102(b). Withdrawal of rejection of claim 4 is also requested due to its dependency from claim 1 whereby it should likewise be allowable.

ALLOWABLE SUBJECT MATTER

Applicant acknowledges with appreciation that Claims 2, 3 and 5 - 10 represent allowable subject matter, overcoming objection if rewritten in independent form including all of the limitations of the base claim and any intervening claims. It is believed that original claims 1 - 10 should be allowed as discussed above. Also new claims 11 and 12 are believed to be allowable, overcoming the stated objection, since claim 11 includes the limitations of claim 1 and claim 2 and claim 12 includes the limitations of claim 1 and claim 4.

REVIEW OF REFERENCES NOT RELIED UPON BY THE EXAMINER

Review of the prior art made of record and not relied upon suggests that West; Diggs et al.; and Pierik fail to teach previously discussed limitations presented in claim 1 of the present invention.

Applicant has made an earnest attempt to respond to all the points included in the Office Action and, in view of the above, submit that the requirements for anticipation under 35 U.S.C §102 have not been met . Applicant believes that original claims 1 - 10 are allowable and respectfully requests reconsideration of the application and notification of allowance of claims 1-10 and new claims 11 and 12 in the next paper from the Office.

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The undersigned representative requests any extension of time that may be deemed necessary to further the prosecution of this application.

The undersigned representative authorizes the Commissioner to charge any additional fees under 37 C.F.R. 1.16 or 1.17 that may be required, or credit any overpayment, to Deposit Account No. 14-1437, referencing Order No. 07589.0184.PCUS00.

In order to facilitate the resolution of any issues or questions presented by this paper, the Examiner should directly contact the undersigned by phone to further the discussion.

Respectfully submitted,



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